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REMARKS

The present application relates to inbred maize line PH3PG. Claims 2-59 have been canceled. New claims 60-89 have been added. No new matter has been added by the present amendment. Applicants respectfully request consideration of the following remarks.

Detailed Action

A. Claim and Specification Objections

Applicants acknowledge the rejection of claims 14, 17, 33, 36, 41, 43, 45, and 46 under the judicially created doctrine of obviousness-type-double patenting as withdrawn. Applicants further acknowledge the rejection of claims 3, 5, 14, 22, 33, 40-46, 50, and 51 under 35 U.S.C. § 112, second paragraph, as withdrawn in light of the claim amendments or cancellations. The rejection of claims 14, 17, 33, 36, 41, 43, 45, and 46 under 35 U.S.C. §§ 102(e)/103(a) are acknowledged as withdrawn.

The Examiner objects to the Table A comprising SSR data inserted on page 15 of the specification at line 16 under 35 U.S.C. § 132 as new matter. Applicant objects to the Examiner's objection of new matter however in order to expedite prosecution Applicant herein cancels the above-referenced material that had been filed March 10, 2003, thus alleviating this rejection.

The Examiner objects to claim 8 under 37 C.F.R. § 1.75(c)as being of improper dependent form. Applicants have canceled claim 8, thereby making this objection moot.

B. Newly Submitted Claims

Applicants acknowledge the addition of new claims 60 through 89, as specifically stated by the claims faxed by Examiner David Fox on November 15, 2002 and the new sample claim submitted by Supervisory Patent Examiner Amy Nelson via e-mail on August 7, 2003 and August 25, 2003 and September 2, 2003 and per the meeting of supervisory and primary Examiners on September 11, 2003. The new claims do not add new matter as there is support for the claims in the originally filed specification. Support for the specific items noted in the claims faxed by Examiner Fox can be found within the specification for *Bacillus thuringiensis* on page 27; for imidazolinone, sulfonylurea, glyphosate, glufosinate, L-phosphinothricin, triazine, and

benzonitrile on pages 30-31; for phytase on page 31; for stearyl-ACP desaturase, fructosyltransferase, levansucrase, alpha-amylase, invertase and starch branching enzyme on pages 31-32; and for waxy starch and increased amylose starch on pages 20 and 32. In addition, Applicants have amended the specification to clarify the deposit language. No new matter has been added.

Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 6, 25, and 52-59 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claims 6 and 25 are indefinite for the recitation "capable of expressing". The Examiner states it is unclear if the plant actually expresses the traits, or when or under what conditions the traits are expressed..

Applicants have canceled claims 6 and 25 and added new claims 65 and 82 to include the language --having--, as suggested by the Examiner, thus alleviating this rejection.

The Examiner rejects claims 52-59 as indefinite in the recitation "PH3PG" as the name "PH3PG" is not known in the art.

Applicants traverse this rejection. The name "PH3PG" does clearly identify the claimed seeds, plants, and plant parts through the actual ATCC deposit of PH3PG in compliance under 37 C.F.R. §§ 1.801-1.809. In an effort to expedite prosecution, claims 52-59 have been canceled, thereby alleviating this rejection.

Claim 53 stands rejected as indefinite in the recitation "The backcross conversion PH3PG maize plant of claim 52" in line 1.

Although not acceding to the Examiner's rejection, in order to expedite prosecution Applicants have canceled claim 53, alleviating this rejection.

Claim 57 stands rejected as indefinite for the recitation "The transgenic PH3PG maize plant of claim 56" in line 1.

Although not acceding to the Examiner's rejection, in order to expedite prosecution Applicants have canceled claim 56, thereby rendering this rejection moot.

In light of the above amendments and remarks, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. § 112, second paragraph.

Rejections Under 35 U.S.C. § 112, First Paragraph

Claims 9, 10, 15, 16, 37-39, and 41-43 remain and claims 52-56 and 59 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention for the reasons of record in the Office Action mailed October 9, 2002.

The Applicants traverses the rejection. Although not acceding to the Examiner's rejection, to expedite prosecution the Applicants have canceled claims 2-59, thereby rendering this rejection moot. The Applicants have added new claims 60-89, as specifically stated by the claims faxed by Examiner David Fox on November 15, 2002 and the new sample claim submitted by Supervisory Patent Examiner Amy Nelson via e-mail on August 7, 2003 and revised via telephone on August 25, 2003 and September 2, 2003 and per the meeting of supervisory and primary Examiners on September 11, 2003. The new claims do not add new matter as there is support for the claims in the originally filed specification as described *supra*.

Further, Applicants assert one of ordinary skill in the art would know how to cross PH3PG with another maize plant. Applicants assert it is well understood by one skilled in the art that maize is a diploid plant species thereby comprising two sets of chromosomes. The F1 hybrid seed and plant produced using PH3PG, regardless of the other maize plant used, is identifiable because it will have a single set of individual maize chromosomes coming from PH3PG. In addition, one of ordinary skill in the art would be able to run a molecular profile on PH3PG and the F1 hybrid and be able to identify the F1 hybrid as being produced from PH3PG. PH3PG is a homozygous inbred plant. When the ovule or pollen is generated from this plant, it will be haploid and will contain one complete set of chromosomes from PH3PG. Upon fertilization, the resulting zygote will receive one set of chromosomes from the parent inbred plant resulting in the diploid zygote. Inbred PH3PG has a unique set of genes present on its chromosomes and this unique set is also present in the hybrid.

As stated in the specification on page 16, lines 8-15, there are many laboratory-based techniques available for the analysis comparison and characterization of plant genotype such as Restriction Length Polymorphisms (RFLPs) and Simple Sequence Repeats (SSRs). Such techniques may be used to identify whether or not PH3PG was used to develop a hybrid. Any person of skill in the art could run a molecular profile of PH3PG based upon the deposit Applicants have made. Therefore, it would be routine to one of ordinary skill in the art to run the profile of a hybrid plant and determine whether or not PH3PG was used as a parent.

Claim 43 stands rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Although not acceding to the Examiner's rejection, in order to expedite prosecution Applicants have canceled claim 43, thereby rendering this rejection moot.

Claims 37-39 and 52-55 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention for the reasons of record in the Office Action mailed October 9, 2002. The Examiner states that Hunsperger *et al.*, Kraft *et al.*, and Eshed *et al.* teach that it is unpredictable whether the gene or genes responsible for conferring a phenotype in one plant genotypic background may be introgressed into the genetic background of a different plant, to confer a desired phenotype is said different plant.

Applicants respectfully traverse this rejection. Applicants have provided assurance that at least 2500 seeds of inbred maize line PH3PG have been deposited with the ATCC. In view of this assurance, the rejection under 35 U.S.C. § 112, first paragraph, should be removed. (MPEP § 2411.02). Although not acceding to the Examiner's rejection, to expedite prosecution the Applicants have canceled claims 37-39 and 52-55, thereby rendering this rejection moot. Applicants have added new claims 60-89, as disclosed *supra*. It is respectfully submitted that Applicants' claims are sufficiently described and enabled by the specification.

In addition, Applicants asserts that the introgression of mutant genes and transgenes is easily, routinely and extensively practiced by those of ordinary skill in the art. Backcrossing has

been known since the 1920's and, because of its predictability, is the method preferred by commercial plant breeders to introduce transgenes into already developed and tested material. An example of how one of ordinary skill in the art can transfer a gene conferring a qualitative trait into a variety through backcrossing is demonstrated by the fact that the commercial market now distributes a multitude of products produced in this manner. Such conversion lines are easily developed without undue experimentation.

Further, Applicants would like to reiterate that a patent application "need not teach, and preferably omits, what is well known in the art." *Hybritech Inc. v. Monoclonal Antibodies Inc.*, 802 F.2d 1367, 231 U.S.P.Q. 81 (Fed. Cir. 1986); MPEP § 601.

Applicants also respectfully disagree with the Examiner as to what is taught by Hunsperger *et al.* Hunsperger *et al.* merely teaches that a gene that results in dwarfism of a petunia plant can be incorporated into other genetic backgrounds of the petunia species (See column 2, line 67 to column 3, lines 1-4). Hunsperger *et al.* merely discusses that the level of the expression of that gene differed in petunia plants of different genetic backgrounds. Hunsperger *et al.* succeeded in incorporating the gene into petunia plants of different genetic backgrounds. In fact, the USPTO in Hunsperger *et al.* allowed claims to any petunia plant comprising genes for dwarfism. Therefore, Hunsperger *et al.* supports the fact that one can introgress a specific trait into a recurrent parent through backcross conversion. Applicants' specification provides ample disclosure of starting materials such as, maize inbred line PH3PG, a discussion of traditional breeding methods, and examples of transgenes and naturally occurring genes that may be used in such methods. Hallauer *et al.* (1988) on page 472, submitted in the Information Disclosure Statement, states that, "For single gene traits that are relatively easy to classify, the backcross method is effective and relatively easy to manage." The teaching of Hallauer *et al.* relates specifically to corn breeding and corn inbred line development.

The Examiner goes on to state that, "Kraft *et al.* teaches that linkage disequilibrium effects and linkage drag prevent the making of plants comprising a single gene conversion, and that such effects are unpredictably genotypic specific and loci-dependent in nature" (page 323, column 1, lines 7-15). Applicants disagree that the article states such points. Kraft *et al.* makes no mention of a plant comprising a single gene conversion or the use of backcrossing. Further, Kraft *et al.* relates to linkage disequilibrium and fingerprinting in sugar beet, a crop other than

maize. Kraft *et al.* states, on page 326, first column, "The generality of our results for other crop species needs to be investigated."

It is understood by those of skill in the art that backcross conversions are routinely produced and do not represent a substantial change to a variety. The World Seed Organization, on its web site, writes, "The concept of an essentially derived variety was introduced into the 1991 Act of the UPOV Convention in order to avoid plagiarism through mutation, multiple back-crossing and to fill the gap between Plant Breeder's Rights and patents." As determined by the UPOV Convention, "essentially derived varieties may be obtained for example by the selection of a natural or induced mutant, or of a somaclonal variant, the selection of a variant individual from plants of the initial variety, backcrossing, or transformation by genetic engineering.

The Examiner goes on to state that, "Eshed *et al.* teaches that in plants, epistatic genetic interactions from the various genetic components comprising contributions from different genomes may affect quantitative traits in genetically complex and less than additive fashion" (page 1815, column 1, line 1 to page 1816, column 1, line 1). The Applicants would like to point out on page 1816, column 1, lines 1-5 of the Eshed *et al.* article it states, "Recent studies that detected epistasis of selected QTL in Drosophila (Long et al. 1995), soybean (Lark *et al.* 1995) and maize (Doebley *et al.* 1995; Cockerham and Zeng 1996) did not show a less-than-additive trend." Emphasis added. The Applicants also adds that transferring a qualitative trait does not require undue experimentation. Please note Hallauer *et al.* (1988) on page 472, submitted in the Information Disclosure Statement, which states, "For single gene traits that are relatively easy to classify, the backcross method is effective and relatively easy to manage." In newly submitted claims 58-87, the genes transferred into PH3PG are now limited to the traits of disease resistance, insect resistance, herbicide resistance, male sterility, waxy starch, and a gene that encodes a product that modifies fatty acid metabolism, that decreases phytate content, or that modifies starch metabolism. Applicants respectfully request the Examiner to withdraw this rejection. For the reasons aforementioned, it is respectfully submitted that Applicants' claims are sufficiently described and enabled by the specification.

Claim 56 stands rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the

invention. The Examiner states the claim does not reasonably provide enablement for the claimed method with all transgenes.

Although not acceding to the Examiner's rejection, in order to expedite prosecution Applicants have canceled claim 56, thereby rendering this rejection moot.

In light of the above amendments and remarks, Applicants respectfully requests withdrawal of the rejections to claims 9, 10, 15, 16, 37-39, and 41-43, 52-56 and 59 under 35 U.S.C. § 112, first paragraph.

Summary

Applicants acknowledge that claims 1, 2, 4, 5, 7, 21, 23, 24, 26, 27, and 40 are allowed.

Applicants have amended the claims as suggested by Examiner David Fox and Supervisory Patent Examiner Amy Nelson as allowable. Applicants submit the claims place the application in condition for allowance and comply with all requirements of form set forth in previous office actions.

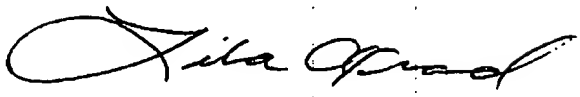
Conclusion

In conclusion, Applicants submit in light of the above amendments and remarks, the claims as amended are in a condition for allowance, and reconsideration is respectfully requested. If it is felt that it would aid in prosecution, the Examiner is invited to contact the undersigned at the number indicated to discuss any outstanding issues.

No fees or extensions of time are believed to be due in connection with this amendment; however, consider this a request for any extension inadvertently omitted, and charge any additional fees to Deposit Account No. 26-0084.

Reconsideration and allowance is respectfully requested.

Respectfully submitted,



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